What Is Claimed:

1. A process for correcting presbyopia, comprising:

resecting a resection portion of a cornea of an eye of a patient to expose a corneal stroma;

determining a nasal-superior center point of the eye;

sculpting an annular portion of the corneal stroma, leaving a central optic zone of the corneal stroma unsculpted, which central optic zone has a center point coinciding with the nasal-superior center point; and

repositioning the resection portion of the cornea onto the eye.

2. The process according to claim 1, wherein the nasal-superior center point is one unit superior and one unit nasal to a center point of a pupil, with each unit represented by one third of a radius of a circle defined by the pupil.

3. The process according to claim 1, wherein the step of determining the nasal-superior center point of the eye comprises:

identifying four quadrants of a pupil of an eye based on a physical center point of the pupil; and

identifying a nasal-superior central point, which is:

a pre-determined distance from the center point of the pupil to an upper edge of the pupil; and

a pre-determined distance from the center point of the pupil to an inner edge of the pupil nearest the nose.

4. The process according to claim 3, wherein the pre-determined distance from the center point of the pupil to an upper edge of the pupil is one unit superior to a center point of the pupil, and the pre-determined distance from the center point of the pupil to an inner edge of the pupil nearest the nose is one unit nasal to a center point of a pupil, with each unit represented by one third of the radius of a circle defined by the pupil.

5. A presbyopia correction system, comprising:

means for removing exposed corneal stroma tissue;

means for controlling the corneal stroma tissue removing means, so as to form an ablation region in a corneal stroma of an eye, to thereby provide presbyopic correction to the eye; and

means for determining a nasal-superior center point, for use by the means for controlling the corneal stroma tissue removing means in forming the ablation region.

6. The presbyopia correction system according to claim 5, wherein the removing means includes a laser system, and the determining means comprises a reference location system of the laser system.

7. The presbyopia correction system according to claim 5, wherein the determining means includes marking or tagging means.

8. The presbyopia correction system according to claim 5, wherein the nasal-superior center point is one unit superior and one unit nasal to a center point of a pupil, with each unit represented by one third of a radius of a circle defined by the pupil.

9. The presbyopia correction system according to claim 5, wherein the means for determining the nasal-superior center point determines the position of the nasal-superior center point by:

identifying four quadrants of a pupil of an eye based on a physical center point of the pupil; and thereafter,

identifying the nasal-superior center point, which is:

a pre-determined distance from the center point of the pupil to an upper edge of the pupil; and

a pre-determined distance from the center point of the pupil to an inner edge of the pupil nearest the nose.

10. A method of producing a presbyopic corrective cornea profile, comprising:

a) defining an internal circular zone A, having a diameter I, which represents an unablated portion of the profile;

b) defining an inner annular ablated zone B, about the internal circular zone, having an outer diameter H and an internal diameter I;

c) defining an intermediate annular zone C, about the inner annular ablated zone B, having an outer diameter G and an internal diameter H;

d) defining an outer annular zone D, about the intermediate annular zone C, having an internal diameter G, and having an outer periphery with a diameter F; and

e) establishing a presbyopic corrective cornea profile based on the zones defined in steps a) to d).

11. The method according to claim 10, wherein the internal circular zone A is centered about a nasal-superior central point.

12. The method according to claim 10, wherein the presbyopic corrective cornea profile is represented by the following formula:

$$G(X) = F(X) + F(X) * (k_3/10 + factor/k_3) * \arctan(factor-1)$$

13. The method according to claim 10, wherein the inner annular ablated zone B is the zone of maximum ablation depth, and has a maximum ablation depth of about 34 to 42 microns.

14. The method according to claim 10, wherein the corrective corneal profile defines an aspherical concave or cup-shaped region extending upward from a point of maximum ablation representation.

15. The method according to claim 10, wherein the corrective corneal profile defines an aspherical concave or cup-shaped region extending to opposite radial sides of a vertical line extending through a point of maximum ablation representation of the profile, and wherein the profile represents a greater ablation volume on an exterior side of the vertical line than on an interior side.

16. The method according to claim 10, wherein:

the diameter F represents a limbus to limbus diameter;

the diameter G is about 7.0 to 7.8 mm;

the diameter H is about 2.4 to 3.2 mm; and

the diameter I is about 1.4 to 1.8 mm.

17. The method according to claim 10, wherein a partial cross-section of the presbyopic corrective cornea profile comprises:

a non-ablation representation for the internal circular zone A;

the inner annular ablated zone B, exterior to the internal circular zone A, exhibiting a small radiused edge and a point of maximum deflection;

the intermediate annular zone C, exterior to the inner annular ablated zone B, exhibiting a continuously smoothly curving extension to a radiused transition edge; and

the outer annular zone D, exterior to the intermediate annular zone C, which is unablated.

18. The method according to claim 10, wherein a partial cross-section of the presbyopic corrective cornea profile comprises:

the internal circular zone A;

the inner annular ablated zone B, exterior to the internal circular zone A, exhibiting a radiused convex edge and a steep, concave drop off profile to a point of maximum ablation;

the intermediate annular zone C, exterior to the inner annular ablated zone B, exhibiting a continuously smoothly curving extension from the point of maximum ablation to a radiused transition edge; and

the outer annular zone D, exterior to the intermediate annular zone C, which is unablated.

19. The method according to claim 18, wherein the inner annular ablated zone B and the intermediate annular zone C form, in a lower quarter of the depth region, a concave, cup-shaped

section defining an area, one-third of which area is interior to a vertical line extending through the point of maximum ablation, and two-thirds of which area is external to a vertical line extending through the point of maximum ablation.

20. The method according to claim 18, wherein the inner annular ablated zone B and the intermediate annular zone C form a concave, cup-shaped profile section which is asymmetric.

21. The method according to claim 18, wherein the inner annular ablated zone B and the intermediate annular zone C form a concave, cup-shaped profile section in which a vertical line extending through the point of maximum ablation defines an interior angle and an exterior angle, wherein the interior angle is less than the exterior angle.

22. The method according to claim 18, wherein the inner annular ablated zone B and the intermediate annular zone C form a concave, cup-shaped profile section in which a vertical line extending through the point of maximum ablation defines an interior angle and an exterior angle with the exterior angle to interior angle ratio being about 2:1.

23. The method according to claim 22 wherein the exterior angle is 50° and the interor angle is 25°.

24. A method for determining a nasal-superior central point for a central unablated zone of a presbyopic corrective corneal contour, comprising:

identifying four quadrants of a pupil of an eye based on a physical center point of the pupil; and thereafter

identifying the position of the nasal-superior central point, which is:

a pre-determined distance from the center point of the pupil to an upper edge of the pupil; and

a pre-determined distance from the center point of the pupil to an inner edge of the pupil nearest the nose.

25. An apparatus for adapting a laser system for use as a presbyopic corrective system, the apparatus comprising:

means for establishing a presbyopic corrective laser ablation profile, for use with a control system of the laser system, which means for establishing is based on zone representations of the eye which include:

a) an internal circular zone A, having a diameter I, which represents an unablated portion of the profile,

b) an inner annular ablated zone B, about the internal circular zone, having an outer diameter H and an internal diameter I,

c) an intermediate annular zone C, about the inner annular ablated zone B, having an outer diameter G and an internal diameter H, and

d) an outer annular zone D, about the intermediate annular zone C, having an internal diameter G, and having an outer periphery with a diameter F; and

input means for inputting data to said means for establishing from which the presbyopic corrective laser ablation profile is determined.

26. The apparatus according to claim 25, wherein the profile establishing means includes a software program.

27. The apparatus according to claim 25, wherein the profile establishing means includes means for conveying the presbyopic corrective laser ablation profile to a flying spot assembly of the laser system.

28. The apparatus according to claim 25, wherein the apparatus includes an erodible mask.

29. The apparatus according to claim 25, wherein the formula

$G(X) = F(X) + F(X) * (k_3/10 + \mathit{factor}/k_3) * \mathit{arctan}\ (\mathit{factor}\ 1)$ is utilized by the means for establishing.

30. The apparatus according to claim 25, wherein the input means includes input data reception area means corresponding to insertable variables utilized by said means for establishing a profile.

31. The apparatus according to claim 30, wherein the input means includes a processor, and the input data reception area includes representative point ranges stored as a selectable data base.